

Fig. 4.

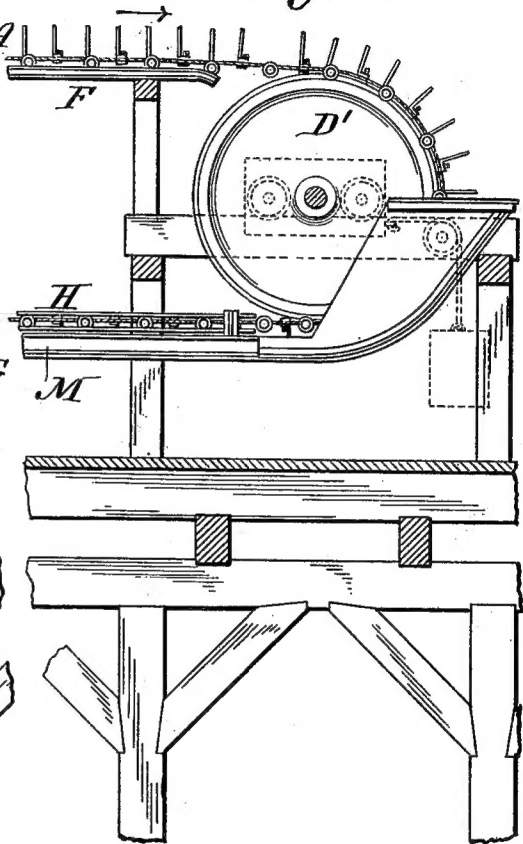
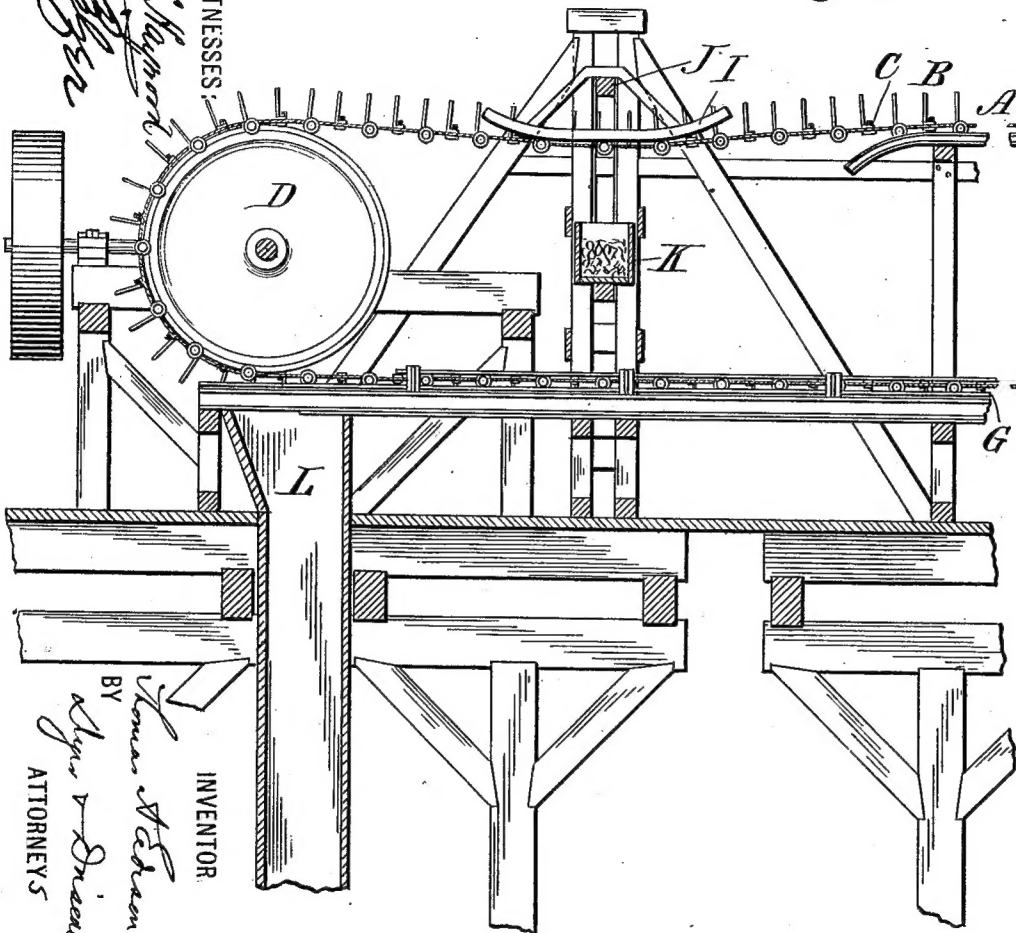


Fig. 1.



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No. 667,201.

T. A. EDISON.

Patented Feb. 5, 1901.

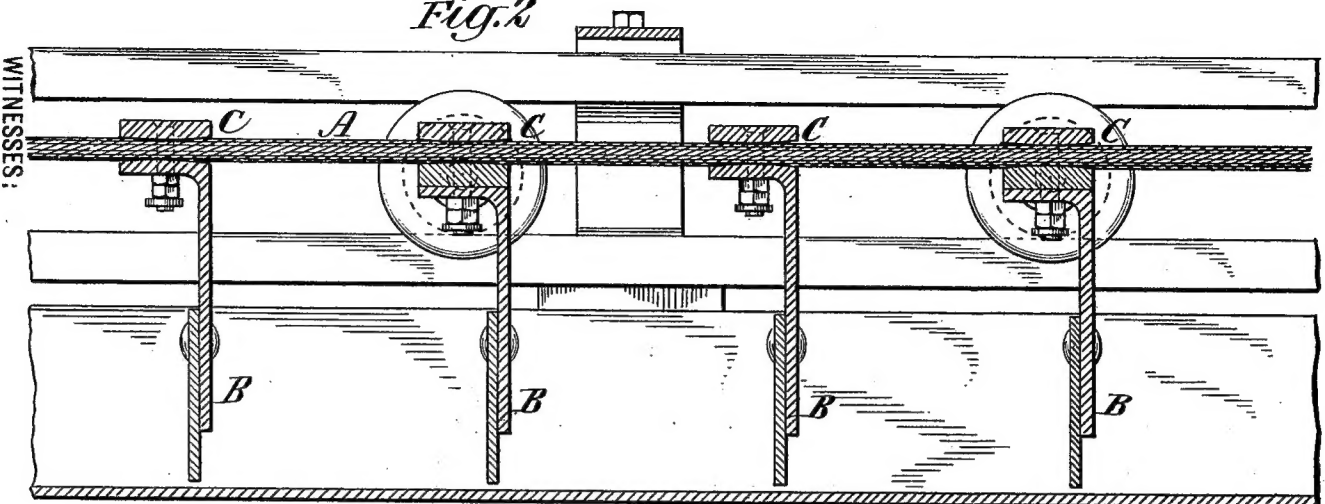
FLIGHT CONVEYER.

(Application filed June 29, 1897.)

(No Model.)

2 Sheets—Sheet 2.

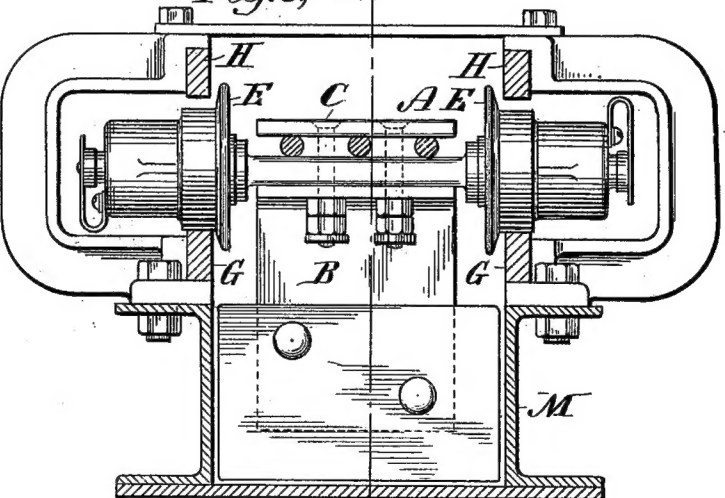
Fig. 2



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Fig. 3, ← 2



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# UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF LLEWELLYN PARK, NEW JERSEY.

## FLIGHT CONVEYER.

SPECIFICATION forming part of Letters Patent No. 667,201, dated February 5, 1901.

Application filed June 29, 1897. Serial No. 642,817. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS A. EDISON, a citizen of the United States, residing at Llewellyn Park, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Flight Conveyers, (Case No. 985,) of which the following is a specification.

The object I have in view is to produce a scraper or flight conveyer which will be simple in construction, efficient in operation, and will have the minimum wear.

In carrying out my invention I mount the scrapers or flights upon a set of endless wire ropes composed of two or more of such ropes. The flights are clamped to the ropes by flat clamps which pass over a smooth pulley at each end of the conveyer, the clamps acting as friction-shoes upon the pulleys. All or part of the scraper-clamps are provided with journal-pins projecting outwardly from them, upon which are carried lubricated wheels. These wheels ride on rails between the end pulleys, so as to support the conveyer, and on the under side of the conveyer, where the work is performed, rails are placed over the wheels as well as under them, so as to keep the flights down to their work and prevent more than a limited vertical movement. Near the smooth pulley, which is connected with the driving power, the rails on the upper side of the conveyer are omitted for a short distance, and at this point two top rails are provided, which are carried by a frame working in slides and suitably weighted, so as to produce the proper tractive effect of the clamps upon the driving-pulley, or the proper tension can be produced by mounting the idle wheel of the conveyer so as to move on rails and drawing it outwardly by a suitable weight.

In the accompanying drawings, Figure 1 is a side elevation and partial section of a portion of the flight conveyer. Fig. 2 is a sectional view of a portion of the under side of the conveyer, taken on line 2 2 in Fig. 3. Fig. 3 is a cross-section of the under side of the conveyer; and Fig. 4, a side elevation of the other end of the conveyer from that illustrated in Fig. 1, showing in dotted lines an alternative form of device for producing tension on the ropes.

A represents a set of endless wire ropes composed of two or more of such ropes. The flights B are clamped to these ropes by clamp-plates C. These clamp-plates pass over the smooth-faced pulleys D D' at the ends of the conveyer, the clamps acting as friction-shoes. The section of the elevator employing the smooth-faced pulley D is shown in Fig. 1. The other section, employing the smooth-faced pulley D', is shown in Fig. 4. Upon some of the clamps are mounted lubricated wheels E, which ride on rails F G at the top and bottom of the conveyer. At the bottom of the conveyer are upper rails H for preventing the upward movement of the flights. Near the driving-pulley D, which is connected with the driving power, the rails F are omitted for a short section, and upper rails I are provided, which bear on the wheels E. These rails I are mounted in a sliding frame J, provided with a suitable weight K, so as to put the set of wire ropes under suitable tension and give the proper tractive effect of the clamps on the smooth pulley D, or the rails F may be extended the entire length of the conveyer and the required tension of the ropes be produced by mounting the idle pulley D' on a carriage riding on rails and drawing it outwardly by a rope connected with a cable running over a wheel and carrying a proper weight, as shown in dotted lines in Fig. 4.

L represents a discharging-conduit, into which the material is discharged from the trough M, in which the flights work.

What I claim is—

1. In a flight conveyer, the combination with a smooth driving-pulley, of a set of endless wire ropes to which the flights are attached, and clamps upon such ropes engaging the smooth face of the pulley, substantially as set forth.

2. In a flight conveyer, the combination with a set of endless ropes carrying the flights, a series of friction-clamps carried by said ropes, and smooth pulleys over which they run, of supporting-rails between the pulleys, and wheels carried by the set of ropes riding on such rails, substantially as set forth.

3. In a flight conveyer, the combination with smooth pulleys, a set of endless wire ropes carrying the flights and a series of clamps carried by said ropes for engaging said pul-

leys, of a weighted tension device for putting the set of endless wire ropes under tension, substantially as set forth.

4. In a flight conveyer, the combination  
5 with smooth pulleys, of a set of endless ropes carrying the flights, clamps holding such ropes together and engaging the smooth faces of the pulleys, wheels carried by the ropes, rails upon which the wheels ride, and a tension device for putting the endless ropes under  
10 tension, substantially as set forth.

5. In a flight conveyer, the combination with smooth pulleys and a set of endless ropes carrying the flights, of wheels carried by the

ropes, rails for supporting the ropes between 15 the smooth pulleys, and a sliding weighted frame carrying rails which press downwardly on the wheels on the upper side of the conveyer at a section where the supporting-rails are omitted for producing tension, substan- 20 tially as set forth.

This specification signed and witnessed this 10th day of June, 1897.

THOMAS A. EDISON.

Witnesses:

RICHARD N. DYER,  
W. PELZER.

It is hereby certified that in Letters Patent No. 667,201, granted February 5, 1901, upon the application of Thomas A. Edison, of Llewellyn Park, New Jersey, for an improvement in "Flight Conveyers," an error appears in the printed specification requiring correction, as follows: In line 1, page 2, the word "weighted" should be stricken out; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 12th day of February, A. D., 1901.

[SEAL.]

F. L. CAMPBELL,  
*Assistant Secretary of the Interior.*

Countersigned:

WALTER H. CHAMBERLIN,  
*Acting Commissioner of Patents.*